Joint Simulation System

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Program Manager

30 May 01

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Agenda

- **Mission/Organization**
- **Schedule**
- **Performance**
- **Integration**

Typical JSIMS-Assisted Joint Exercise

Acronyms

AAR	-	After Action Review
CCWS	-	Common Component Workstation
C4I	-	Command, Control, Communications, Computers and Intelligence
CINC	-	Commander in Chief
JECG	-	Joint Exercise Control Group
JFACC	-	Joint Forces Air Component Commander
JFLCC	-	Joint Forces Land Component Commander
JFMCC	-	Joint Forces Maritime Component Commander
OPFOR	-	Opposing Forces

CINC

Establishes Training Objectives

Supporting CINC

Training Audience

Combined Joint Task Force

C4I Systems

Orders Guidance

Status

Components
- JFLCC
- JFACC
- JFMCC
- etc.

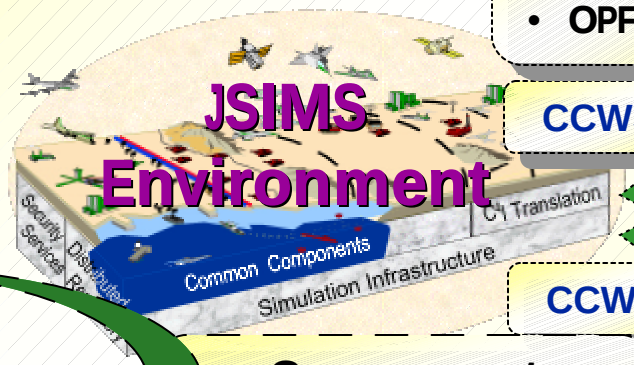
Role Players

JECG

Develop, Execute Joint Synthetic Environment

- Scripting
- AAR
- OPFOR

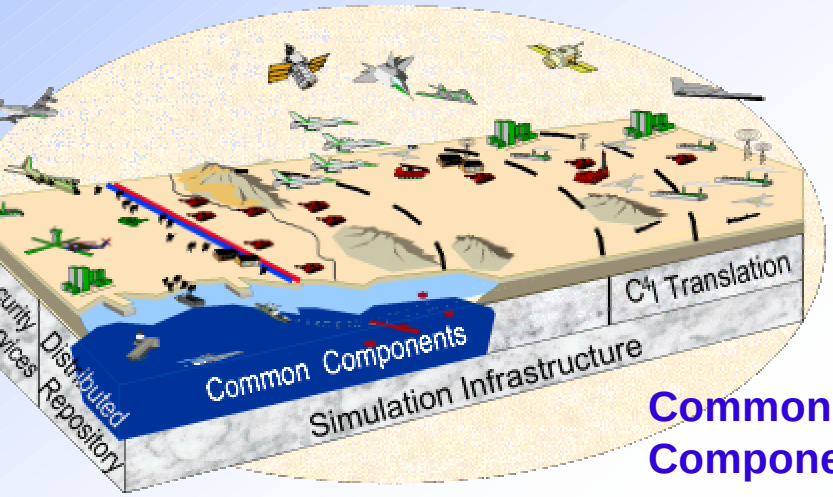
CCWS

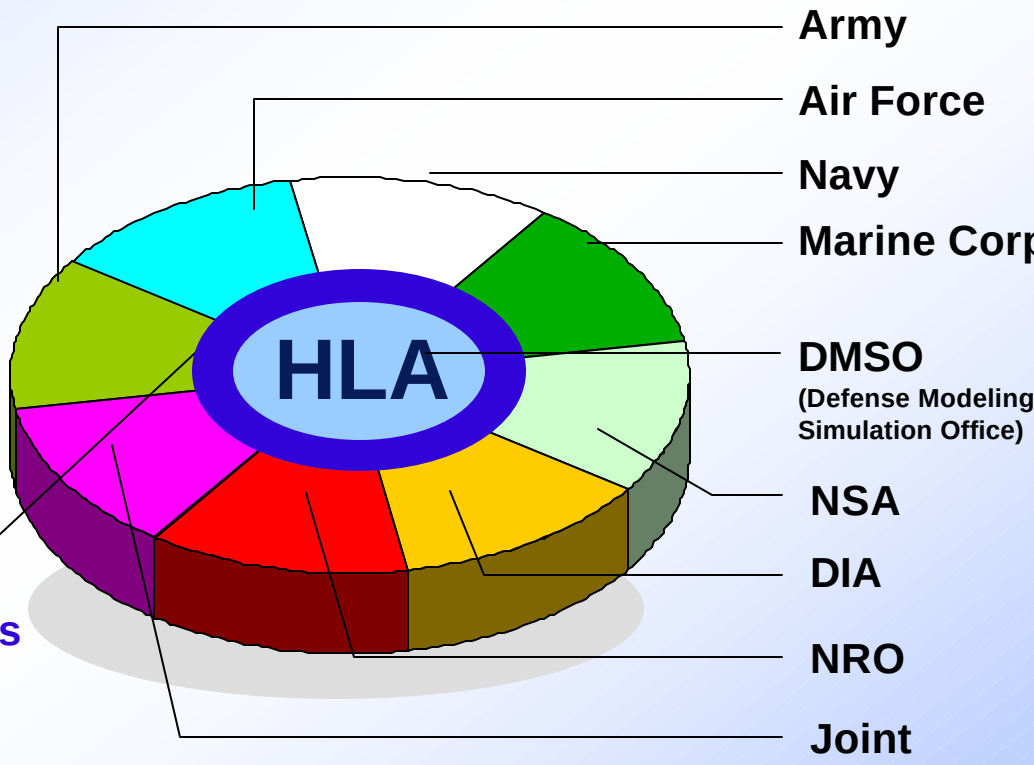


CCWS

Component Response Cells

JSIMS Alliance





A Joint, interoperable simulation

A collaborative effort of **nine** Alliance partners

- **Replace outdated Joint and Service legacy systems**
- **Real-world C4I systems … using common components**
- **Distributed training … mission planning … mission rehearsal**
- **Achieve the CJCS goal to "move more electrons and fewer troops"**

JSIMS Streamlined Reporting Chain

Program Decision Recommendations

UNDERSECRETARY OF DEFENSE (ACQUISITION, TECHNOLOGY AND LOGISTICS)
The Honorable
E.C. "Pete" Aldridge

Validates Mission Needs and Performance Baselines

DEFENSE ACQUISITION BOARD

JOINT REQUIREMENTS OVERSIGHT COUNCIL

ARMY ACQUISITION EXECUTIVE
(ASA(AL&T))
Dr. Kenneth Oscar *

VERARCHING INTEGRATED PRODUCT TEAM
ASD(C3I)
Mr. John Landon

Mission Needs and Requirements Issues

WORKING-LEVEL INTEGRATED PRODUCT TEAMS
(ACQ, COST, TEST)

Information Coordination

JSIMS DIRECT REPORTING PROGRAM MANAGER
Mr. James M. Skurka

Information Coordination

JOINT WARFIGHTING CENTER
MG Scott Wallace

Acquisition and Program Management

Program Recommendations

Requirements Management

* Denotes Acting Official

JSIMS Program Management

PM JSIMS
Mr. James M. Skurka, SES (USA)

Alliance Executive Office (AEO)
Laura Knight, SES (USN)

Executive Agents (EA)

JSIMS Requirements Control Board
Chair: MG Scott Wallace (USA
USJFCOM JWFC

Development Agents (DA)

USA DA
WARSIM/WIM
COL Randy Ball (USA)

USN DA
Maritime
Ms Vanessa Hallihan, GS15

USMC DA
COL Joe Buranosky (USMC)

USAF DA
NASM
COL Phil Faye (USAF)

NRO DA
NATSIM
LtCol John Tillie (USAF)

DIA DA
DOMINO
Mr. Peter Starr, GS15

NSA DA
JSIGSIM
Mr. John Riordon, GS15

Joint DA
Joint Models
CDR Jim Booth (USN)

DMSO DA
RTI
COL Forrest Crain (USA)

Executive Agents

Executive Agents

- U.S. Army, Deputy Chief of Staff for Operations & Plans:
  - LTG Larry Ellis/BG William Webster
- U.S. Air Force, Directorate of Command and Control for Air and Space Operations: LtGen Robert Fogelsong/BGen James Morehouse
- U.S. Navy Director of Naval Training and Education (N79):
  - Dr. Allen Zeman
- Marine Corps Combat Development Command (MCCDC):
  - BGEN Thomas Jones/Dr. Mike Bailey
- Defense Intelligence Agency (DIA): VADM Thomas Wilson
- Joint Warfighting Center (JWFC): MG Scott Wallace

Interested Agencies (Also called Executive Agents)

- Defense Information Systems Agency (DISA)
- U.S. Transportation Command (USTRANSCOM)
- U.S. Special Operations Command (USSOCOM)
- National Imagery and Mapping Agency (NIMA)
- U.S. Air Force, Director of Weather (USAF/XOW)
- Oceanographer of the Navy (N096)

} DoD MSEAs

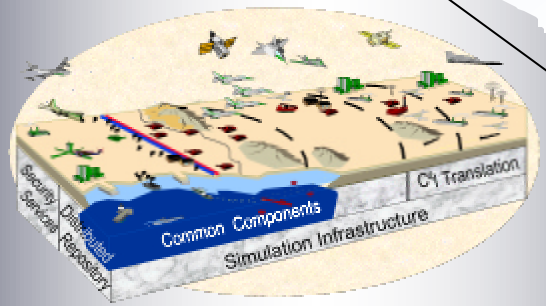
JSIMS Development Partners

JSIMS Maritime --San Diego, CA
Maritime Domain

Joint SIGINT Simulation (J-SIGSIM) -- Ft Meade, MD
Signal Intelligence, *BTG*

National Simulation (NATSIM) -- Chantilly, VA
National Intelligence Systems
Veridian/MRJ

National Air and Space Model (NASM) -- Hanscom AFB, MA
Air and Space Domain, *Raytheon*



SPAWAR
ESC
NSA
NRO
DIA
DMSO
JIOC
MARCORSYSCOM
Joint
STRICOM

DIA Object Oriented Model for Intelligence Operations (DOMINO) Bolling AFB, Wash., DC
National Intel Process Modeling,
Veridian/MRJ

High Level Architecture (HLA) -- Alexandria, VA
Architecture, *SAIC*

NASM Joint Operations & ISR Simulation (JOISIM) -- San Antonio, TX
Airborne Sensors, *JIOC/CACI*

USMC DA -- Orlando, FL
USMC Requirements
VISICOM

Warfighter's Simulation (WARSIM) -- Orlando, FL
Land Domain, *Lockheed-Martin*

WARSIM Intelligence Module (WIM) -- Orlando, FL
Tactical Intelligence, *Veridian/MRJ*

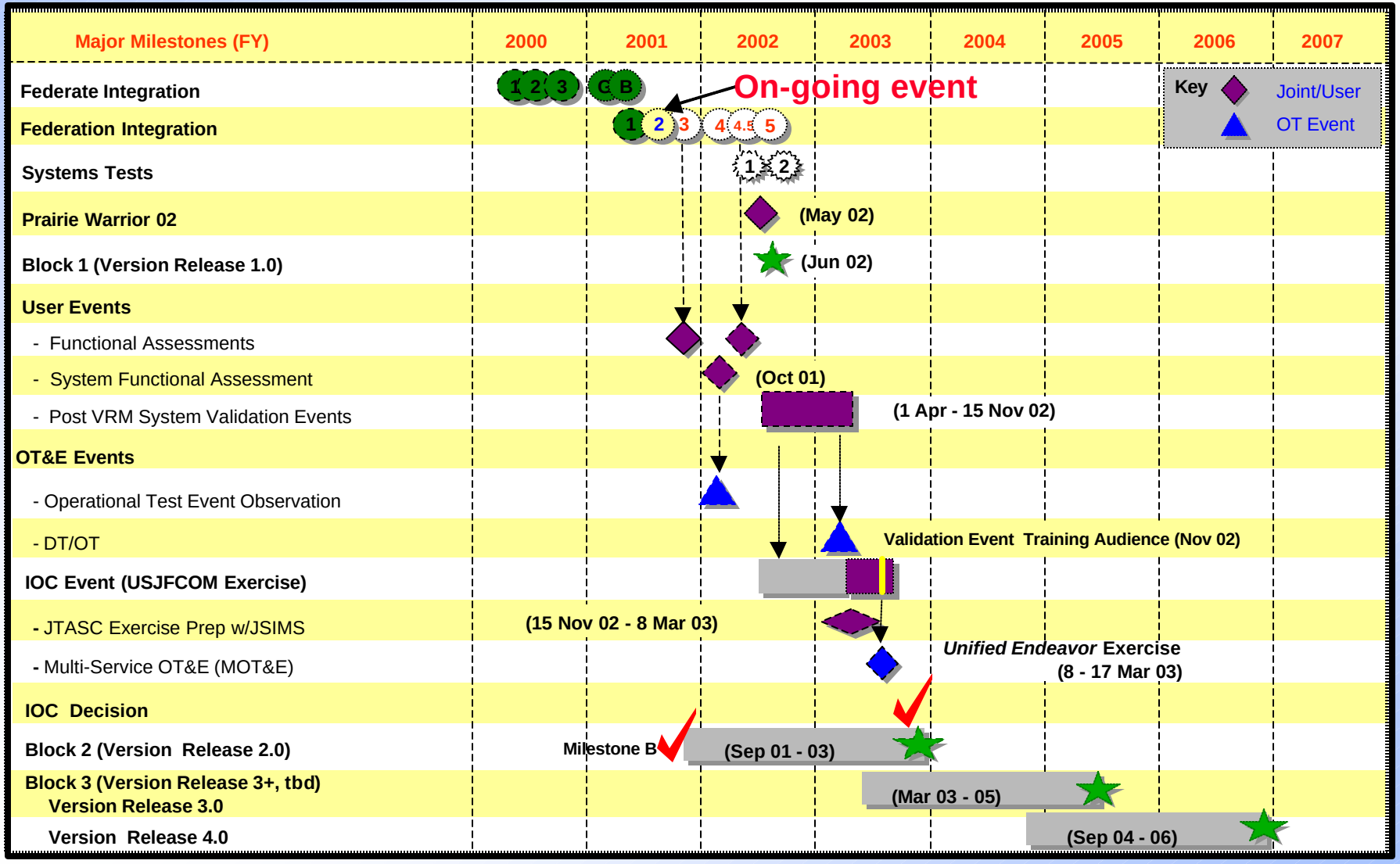
JSIMS Joint DA -- Orlando, FL
Joint Domain, *TRW*

Agenda

- **Mission/Organization**
- **Schedule**
- **Performance**
- **Integration**

JSIMS Program
Integrated Master Schedule

As of 15 May 2001



JSIMS Blocks

FY01 FY02 FY03 FY04 FY05 FY06 FY07 FY08

Block 1

Version 1.0

Joint and Components Training

Block 2

Version 2.0

Service Title X Training
- replace "JTC"
- first experimentation use

Block 3 (V3.0+)

Version 3.0

Increasing Joint, Service
National capabilities,
interfaces and
automatio

Version 4.0

Partners sequence their requirements

JSIMS Requirements Control Board sequences "common" requirements

Version 5.0

Evolutionary Acquisition

Blocks include:
- **one or more versions**
- **MOT&E**

Block 4, Block 5

IOC Training Event
Unified Endeavor Exercise

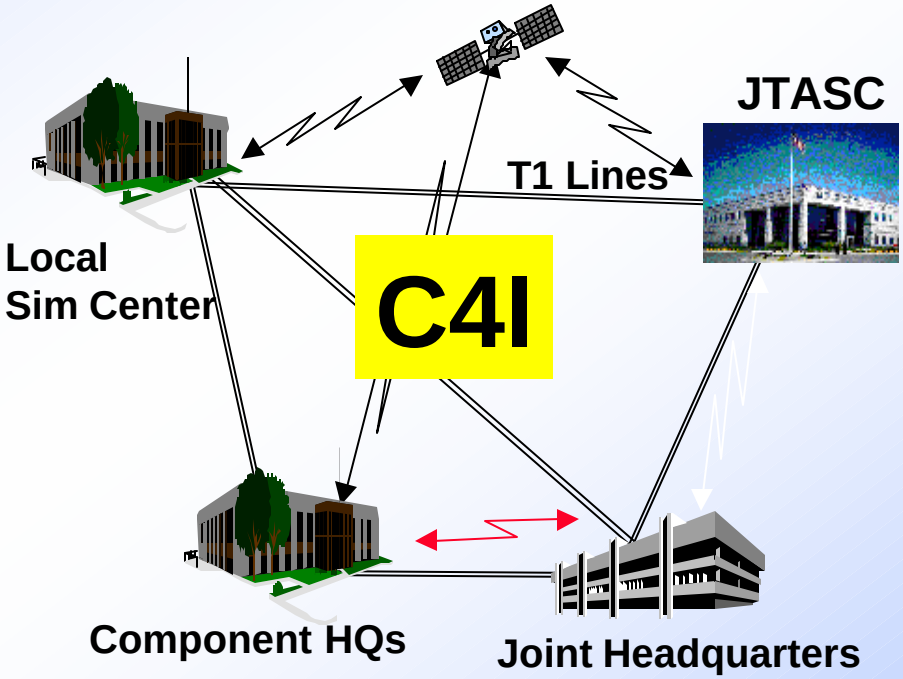
Training Audience:
- Joint Task Force – training to three-star Joint and Combined Task Force Commanders and their staffs

Purpose:
- Preserve and Advance Joint Operational and Warfighting Skills

Complexity:
- Distributed exercise to multiple world-wide sites
- 159 Joint Mission Essential Tasks (JMET) total … 66 JMETS on JTF HQ Staff JMETL

Scope:
- Focus on CINC training plans

Size:
- 3,000 – 5,000 personnel
- 80,000+ mandays
- 8-15 distributed sites



JTF Commander and Staff Training

Phase I	Phase II		Phase III	Phase IV
Academic Training	Planning Exercise	Deployment Exercise	Exercise Execution	Analysis

Agenda

- **Mission/Organization**
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IOC Key Performance Parameters (KPP)

- **KPP 1 - OPERATIONAL TASKS AND CONDITIONS**
  - Support *CINC/JTF with Components* Training as defined in the JSIMS Universal Capabilities List (JUCL) J3 Minimum
  - Support training of *CINC Joint Mission Essential Task Lists (JMETL)* and Service Task List items
- **KPP 2 - C4I INTERFACE**
  - Provide full common operational picture (COP) integration with GCCS, JMCIS, TBMCS, ATCCS, JWICS, AND GTN
- **KPP 3 - DISTRIBUTED ENVIRONMENT**
  - Distribute to geographically separate participants, given a DOD network infrastructure
- **KPP 4 - SYSTEM UPTIME RATIO**
  - Demonstrate system availability at least 90% during a 14-day computer-aided exercise, 24 hours per day

NOTE: KPP 2 being updated based on guidance from JCS J6/J8

JSIMS Block 1 (IOC) Functionality

Joint	• 18 Joint Models: CINC, CINC/J1-J6, CJTF, JTF/J1-J6, NCA, JFACC, JFLCC, JFMCC		• C4I Interface to GCCS • Role Player Functions
Army	• Maneuver • C2 • Perceived Truth	• Artillery • Rotary Wing Aviation • Terrain	• Logistics • NBC • Intelligence
Navy	• Ship Platforms • Warship Motion & Sensors • Underway Replenishment	• Weapons & Engagement • Basic Ocean • Flight Operations	• Naval Bases & Ports • Ship/Ground Engagements • Submarine/Air/Surface Warfare Operations
USAF	• AF Fixed Wing Missions • Civil Environment • AF Organizations & Airbases	• Generic FWA Platforms • Missiles • Satellite Platforms	• TBMCS - Air Tasking Order, ADSI • Some Airborne Sensors (JOISIM) • Electronic Warfare (JOISIM)
USMC	• Landing Plan Execution • Waterborne & Air loading, assault, landing		
Agencies	• MASINT, HUMINT, ELINT Model Support	• C4I Interfaces (ASAS, CSP, CGS, AEPDS)	• Full SIGINT Capability • Full IMINT Capability • Collection Management
Alliance Common Components	• Simulation Engine, MDDI, CASS • Security Common Components	• AAR, User Workstations, Scenario Preparation	• HLA Common Components (FCM, Technical Control, JCL, RTI)

Note: JSIMS IOC functionality is defined in the ORD by the KPPs

Agenda

- Mission/Organization
- Schedule
- Performance
- Integration

History

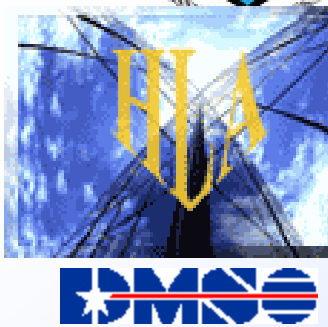
- Fall 1999
  - Reorganized at the direction of Dr. Etter and Dr. Gansler
  - Big Bang approach abandoned
  - DoD High Level Architecture (HLA) adopted
  - New leadership team drawn from beyond JSIMS
- Spring 2000
  - Postulated a new overall design

Architecture Definition Approach

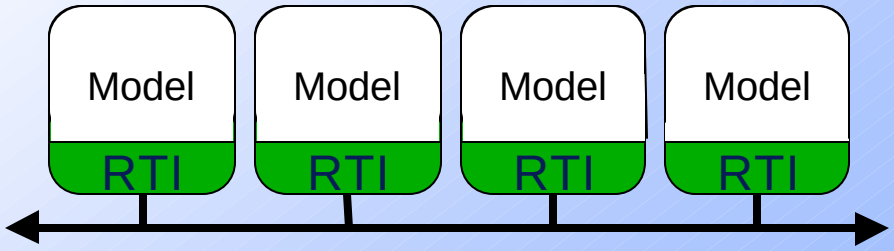
- Beware the cost of coordination
  - Minimize dependence
  - Trade duplicate effort for consensus
- Evolve through experience and not supposition
  - Lead with experimental investigations
- Six week cycle for documentation and discussion

A software architecture can be no more cohesive than the organization that employs it.

JSIMS Architecture



- Based on the DoD High Level Architecture
  - Joins systems, federates, into groups, federations, for some purpose based on a common federation object model.
- Software organized into large components
  - Library
  - Application
  - Domain Federates
  - Support Federates
- Components assembled incrementally



JSIMS Architecture

Two separate federations for security reasons

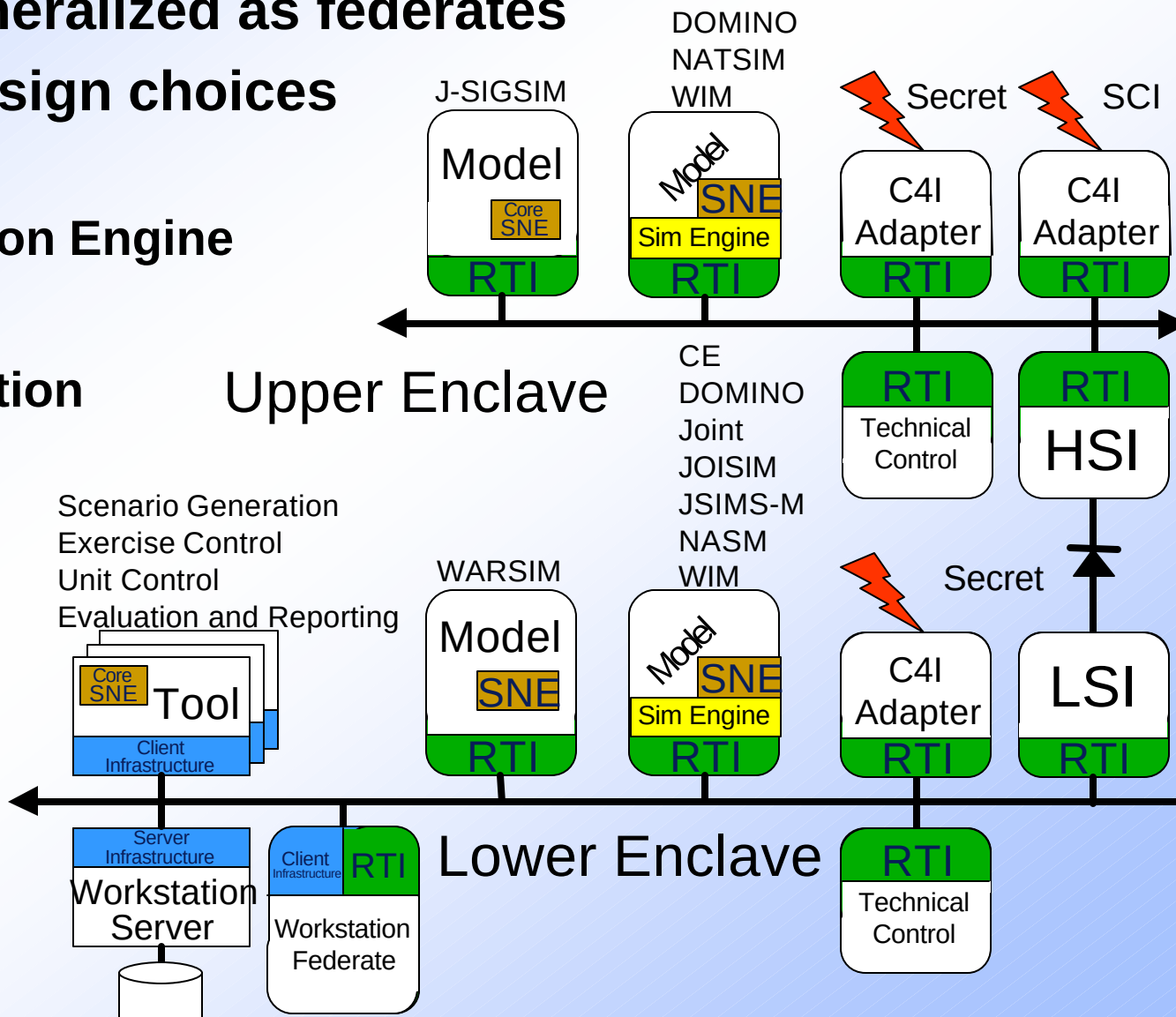
C4I interfaces generalized as federates

Modelers have design choices

- **Direct HLA**
- **Alliance Simulation Engine**

Common tools

- **Scenario Generation**
- **Workstation**



JOINT SIMULATION SYSTEM (JSIMS)

JSIMS ALLIANCE ACROSS THE NATION

MISSION

To provide...
- A computer-simulated environment...
- For use by CINCs, joint organizations, and the Services...
- To educate, train, and develop doctrine and tactics...
- For Joint warfighting and other operational needs.

National Simulation (NATSIM) -- Reston, VA
National Intelligence Systems

Joint SIGINT Simulation (J-SIGSIM) -- Columbia, MD
Signal Intelligence

National Air and Space Model (NASM)
Hanscom AFB, MA
Air and Space Domain

ESC

NRO

NSA

DIA

DOMINO -- Bolling AFB, Wash, DC
DIA National Intel Process Modeling

DMSO

DMSO -- Alexandria, VA
High-Level Architecture

JSIMS Maritime -- San Diego, CA
Maritime Domain

SPAWAR

JIOC

NASM Joint Operations & ISR Simulation (JOISIM) -- San Antonio, TX
Airborne Sensors

MARCORSYSCOM

USMC DA -- Orlando, FL
USMC Requirements

STRICOM

Joint

JSIMS Joint DA -- Orlando, FL
Joint Domain

Warfighters' Simulation (WARSIM) -- Orlando, FL
Land Domain

WARSIM Intelligence Module (WIM) -- Orlando, FL
Tactical Intelligence

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